

Atlantic Croaker Terms of Reference for Peer Review

1. Evaluate precision and accuracy of fishery-dependent and fishery-independent data used in the assessment, including the following but not limited to:
 - a. Discuss the effects of data strengths and weaknesses (e.g. temporal and spatial scale, gear selectivities, aging accuracy, sample size, standardization of indices) on model inputs and outputs.
 - b. Report standard errors of inputs and use them to inform the model if possible.
 - c. Justify weighting or elimination of available data sources.
2. Evaluate models used to estimate population parameters (e.g., F, biomass, abundance) and biological reference points.
 - a. Did the model have difficulty finding a stable solution? Were sensitivity analyses for starting parameter values, priors, etc. and other model diagnostics performed?
 - b. Have the model strengths and limitations been clearly and thoroughly explained?
 - c. If using a new model, has it been tested using simulated data?
 - d. Has the model theory and framework been demonstrated and documented in the stock assessment literature?
3. State and evaluate assumptions made for all models and explain the likely effects of assumption violations on synthesis of input data and model outputs. Examples of assumptions may include (but are not limited to):
 - a. Calculation of M.
 - b. Choice to use (or estimate) constant, time-varying, or age-varying M and catchability.
 - c. No error in the catch-at-age or catch-at-length matrix.
 - d. Choice of a plus group.
 - e. Population is at equilibrium.
 - f. Constant ecosystem (abiotic and trophic) conditions.
 - g. Choice of stock-recruitment function.
 - h. Choice of proxies for MSY-based reference points.
 - i. Determination of stock structure.
4. Evaluate uncertainty of model estimates and biological or empirical reference points.
5. Perform retrospective analyses, assess magnitude and direction of retrospective patterns detected, and discuss implications of any observed retrospective pattern for uncertainty in population parameters (e.g., F, SSB), reference points, and/or management measures.
6. Recommend stock status as related to reference points:
 - a. Biomass threshold and target.
 - b. F threshold and target.
7. Compare trends in population parameters and reference points with current and proposed modeling approaches. If outcomes differ, discuss potential causes of observed discrepancies.
8. If a minority [stock assessment] report has been filed, explain majority reasoning against adopting approach suggested in that report. The minority report should explain reasoning against adopting approach suggested by the majority.
9. Develop detailed short and long-term prioritized lists of recommendations for future research, data collection, and assessment methodology. Highlight improvements to be made by next benchmark review.